



(12) **United States Patent**
Naik et al.

(10) **Patent No.:** **US 9,549,065 B1**
(45) **Date of Patent:** **Jan. 17, 2017**

(54) **SYSTEM AND METHOD FOR AUTOMATED CUSTOMER SERVICE WITH CONTINGENT LIVE INTERACTION**

(71) Applicant: **Convergys Customer Management Delaware LLC**, Cincinnati, OH (US)

(72) Inventors: **Jayant M. Naik**, Mason, OH (US); **Cordell Coy**, Villa Hills, KY (US); **Dale Robert Peterson**, Fort Thomas, KY (US); **Joseph DiFonzo**, Sanford, FL (US); **Stephen D. Weagraff**, Winter Park, FL (US); **Matthew Yuschik**, Andover, MA (US); **Michael Louis Nutter**, Cincinnati, OH (US); **Robert Birch**, Orlando, FL (US); **Scot Cunningham**, Osgood, IN (US); **Woosung Kim**, Mason, OH (US); **Scott Irwin**, Winter Springs, FL (US)

(73) Assignee: **Convergys Customer Management Delaware LLC**, Cincinnati, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 250 days.

(21) Appl. No.: **13/659,366**

(22) Filed: **Oct. 24, 2012**

Related U.S. Application Data

(63) Continuation of application No. 11/751,976, filed on May 22, 2007, now Pat. No. 8,379,830, and a continuation-in-part of application No. 11/686,812, filed on Mar. 15, 2007.

(60) Provisional application No. 60/747,896, filed on May 22, 2006, provisional application No. 60/908,044, filed on Mar. 26, 2007.

(51) **Int. Cl.**
H04M 1/64 (2006.01)
H04M 3/493 (2006.01)

(52) **U.S. Cl.**
CPC **H04M 3/493** (2013.01); **H04M 2203/355** (2013.01)

(58) **Field of Classification Search**
CPC H04M 3/523; H04M 3/51; H04M 2201/40; H04M 1/271; H04M 3/53325
USPC 379/265.02, 265.03; 704/251
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,206,903	A	4/1993	Kohler et al.
5,214,715	A	5/1993	Carpenter et al.
5,345,380	A	9/1994	Babson, III et al.
5,411,947	A	5/1995	Hostetler et al.
5,452,341	A	9/1995	Sattar

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2248897	9/1997
CA	2301664	1/1999

(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 10/862,482, filed Jun. 7, 2004, Irwin, et al.

(Continued)

Primary Examiner — Simon King

(74) *Attorney, Agent, or Firm* — Crowe & Dunlevy, P.C.

(57) **ABSTRACT**

A balance between customer satisfaction and cost to providing customer care can be achieved based on the use of online interaction classification techniques. Such techniques can use measurements such as a log likelihood ratio to determine if an interaction should be removed from automation to live support if it appears necessary.

4 Claims, 4 Drawing Sheets

